Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

$$\frac{k[s\sqrt{\beta^2+1}+l-\frac{1}{2}a\beta]^3}{3[k^2-\beta^2]^{\frac{3}{2}}}\left\{\pi-\cos^{-1}\left[\frac{s[k+\beta]}{\beta\{s+[(2l-a\beta)/(2\sqrt{1+\beta^2})]\}}-1\right]\right.$$

$$+\left[\frac{s[+\beta]}{\beta\{s+[(2l-a\beta)/(2\sqrt{\beta^2+1})]\}}-1\right]\times$$

$$\left.\sqrt{\frac{s[k+\beta]}{\beta\{s+[(2l-a\beta)/(2\sqrt{\beta^2+1})]\}}}\left[2-\frac{s[k+\beta]}{\beta\{s+[(2l-a\beta)/(2\sqrt{\beta^2+1})]\}}\right]\right\}$$

$$-\frac{a^3k}{24}\left\{\pi-\cos^{-1}\left[\frac{2s\sqrt{\beta^2+1}}{a\beta}-1\right]\right.$$

$$\left.+2\left[\frac{2s\sqrt{\beta^2+1}}{a\beta}-1\right]\sqrt{\frac{s\sqrt{\beta^2+1}}{a\beta}\left[1-\frac{s\sqrt{\beta^2+1}}{a\beta}\right]}\right]=\tfrac{1}{3}\tfrac{1}{2}\tfrac{1}{4}\pi c[19a^2+7ab+b^2],$$

which equation contains only s, β, and constants. However, the chance of solving it after differentiation seems extremely slight.

PROBLEMS FOR SOLUTION.

MISCELLANEOUS.

56. Proposed by **S. HART WRIGHT, A. M., M. D., Ph. D., Penn Yan, N. Y.**

In latitude 40° N.$=\lambda$, when the moon's declination is 5° 23′ N.$=\delta$, and the sun's declination 9° 52′ S.$=-\delta'$, how long after sunset will the cusps of the moon's crescent set synchronously, the moon having recently passed its conjunction with the sun ?

57. Proposed by **GEORGE LILLEY, Ph. D., LL. D., Professor of Mathematics in the Oregon State University, Eugene, Oregon.**

A particle is placed very near the center of a circle, round the circumference of which n equal repulsive forces are symmetrically arranged ; each force varies inversely as the mth power of its distance from the particle. Show that the resultant force is approximately $\frac{m_1 n(m-1)}{2r^{m+1}}\times CP$, and tends to the center of the circle, where m_1 is the mass of the particle, CP its distance from the center of the circle, and r the radius of the circle.

EDITORIALS.

The credit of preparing the index for this volume is due Editor Colow.

Dr. Artemas Martin, of the U. S. Coast and Geodetic Survey, has been